

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1     1.     (Currently Amended) A method for facilitating transfer of a data object  
2           retained by a first at least one computer-readable data storage device in  
3           communication with a first computing system from said first computing  
4           system to a second computing system and thence to a second computer-  
5           readable data storage device, comprising the step of segmenting said  
6           data object into a plurality of data object segments retained by said  
7           computer-readable data storage devices, said segmenting said data  
8           object comprising the steps of:

9                 requesting a range of addresses within said first computer-readable  
10                data storage device containing said data object;

11               determining a number of computer-readable storage devices in  
12               communication with said first computing system available to retain  
13               a plurality of segments of said data object;

14               determining a maximum digital data transfer load for the computer-  
15               readable storage devices in communication with said first  
16               computing system;

17 assigning a minimum segment size which is the smallest amount of  
18 digital data to be contained within one segment of the data object;  
  
19 calculating a first segment size as a first function of a number of the  
20 computer-readable storage devices, the current digital data transfer  
21 load, the maximum digital data transfer load, and the minimum  
22 segment size;  
  
23 assigning a last segment size as the minimum segment size;  
  
24 calculating all remaining segment sizes as a second function of the  
25 number of the computer-readable storage devices, the current  
26 digital data transfer load, the maximum digital data transfer load,  
27 and the minimum segment size; and  
  
28 partitioning said data object into said plurality of data object segments  
29 to be retained by said computer-readable data storage devices  
30 whereby ~~the~~ a first data object segment of the data object is of the  
31 first segment size, ~~the~~ a data object last segment of the data object  
32 is of the last segment size, and all ~~the remaining data object~~  
33 segments ~~of the data object is~~ are of the remaining segment sizes.

1 2. (Currently Amended) The method of claim 1 wherein said segmenting  
2 further comprises the steps of:

3            assigning one of the number of computer-readable storage devices to  
4            retain each of the plurality data object segments ~~of the data object~~;  
5            assigning an address within the computer-readable storage devices to  
6            identify the location of an assigned segment;  
7            assigning an object name to each of the plurality of data object  
8            ~~segments of the data object~~; and  
9            transferring each segment to its assigned computer-readable storage  
10           device.

1    3.    (Currently Amended) The method of claim 1 wherein the first function to  
2           determine the first segment size is:

$$3 \qquad \qquad \qquad \mathbf{Seg1} = \min(\mathbf{SegSize}_{\min}, \mathbf{V/f})$$

4            where

5            **Seg1** is the first segment size,

6            **min** is the minimum function of two variables,

7            **SegSize<sub>min</sub>** is the minimum segment size allowed  
8            during the fragmenting of said data object,

9            **V** is a total size of the data object, and

f is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right)$$

where

$N_d$  is the number of computer-readable storage devices available to retain the data object segments of the data object,

$M_i$  is the maximum digital data transfer load, and

$C_i$  is the current digital data transfer load.

4. (Currently Amended) The method of claim 1 wherein the second function to determine the remaining segment sizes is:

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

where

**Segn** is the a segment size for one data object segment of the remaining data object segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed

during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_i}{\mathbf{M}_i - \mathbf{C}_i} \right)$$

where

$N_d$  is the number of computer-readable storage devices available to retain the segments of the data object,

$M_l$  is the maximum digital data transfer load, and

$C_i$  is the current digital data transfer load.

5. (Previously Presented) The method of claim 1 wherein said segmenting further comprises the step of:

determining a file interactivity factor describing a number of jumps by the second computing system within the data object during processing by said second computing system.

1 6. (Original) The method of claim 5 wherein the first function is further  
2 dependent upon the file interactivity factor.

1 7. (Currently Amended) The method of claim 6 wherein the first function to  
2 determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,

9 **V** is a total size of the data object, and

10 **f** is determined by the formula:

11 
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

12 where

13  $N_d$  is the number of computer-readable  
14 storage devices available to retain the  
15 data object segments of the data object,  
16  $M_l$  is the maximum digital data transfer  
17 load,  
18  $C_l$  is the current digital data transfer  
19 load, and  
20  $I$  is the file interactivity factor.

1 8. (Original) The method of claim 5 wherein the second function is further  
2 dependent upon the file interactivity factor.

1 9. (Currently Amended) The method of claim 8 wherein the second function  
2 to determine the remaining segment sizes is:

3 
$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4 where

5  $\text{Segn}$  is the a segment size for one data object  
6 segment of the remaining data object segments,  
7  $\max$  is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed

during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_l}{\mathbf{M}_l - \mathbf{C}_l} \right) + \mathbf{I}$$

where

$N_d$  is the number of computer-readable

storage devices available to retain the

data object segments of the data object,

**$M_1$**  is the maximum digital data transfer

load,

**$C_i$  is the current digital data transfer**

load, and

**I** is the file interactivity factor.

10. (Previously Presented) The method of claim 1 wherein said segmenting further comprises the step of:



3           determining a file usage factor describing a number of requests for  
4           said data object for a period of time.

1   11.   (Original) The method of claim 9 wherein the first function is further  
2           dependent upon the file usage factor.

1   12.   (Currently Amended) The method of claim 10 wherein the first function to  
2           determine the first segment size is:

3                           **Seg1** = min(**SegSize**<sub>min</sub>, **V/f**)

4                           where

5                           **Seg1** is the first segment size,

6                           **min** is the minimum function of two variables,

7                           **SegSize**<sub>min</sub> is the minimum segment size allowed  
8                           during the fragmenting of said data object,

9                           **V** is a total size of the data object, and

10                          **f** is determined by the formula:

11   
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H$$

12                           where

13  $N_d$  is the number of computer-readable  
14 storage devices available to retain the  
15 data object segments of the data object,  
16  $M_l$  is the maximum digital data transfer  
17 load,  
18  $C_l$  is the current digital data transfer  
19 load, and  
20  $H$  is the file usage factor.

1 13. (Original) The method of claim 9 wherein the second function is further  
2 dependent upon the file usage factor.

1 14. (Currently Amended) The method of claim 13 wherein the second function  
2 to determine the remaining segment sizes is:

3 
$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4 where

5  $\text{Segn}$  is the a segment size for one data object  
6 segment of the remaining data object segments,  
7  $\max$  is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_i}{\mathbf{M}_i - \mathbf{C}_i} \right) + \mathbf{H}$$

where

**N<sub>d</sub>** is the number of computer-readable storage devices available to retain the data object segments of the data object,

$M_i$  is the maximum digital data transfer load,

$C_l$  is the current digital data transfer load, and

**H** is the file usage factor.

15. (Previously Presented) The method of claim 1 wherein said segmenting further comprises the steps of:

determining a file usage factor describing a number of requests for  
said data object for a period of time; and

determining a file interactivity factor describing a number of jumps by  
the second computing system within the data object during  
processing by said second computing system.

16. (Original) The method of claim 15 wherein the first function is further  
dependent upon the file usage factor and the file interactivity factor.

17. (Currently Amended) The method of claim 16 wherein the first function to  
determine the first segment size is:

$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

where

**Seg1** is the first segment size,

**min** is the minimum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed  
during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

11

$$f = N_d + \left( \frac{M_i}{M_i} - C_i \right) + H + I$$

12

where

13

$N_d$  is the number of computer-readable

14

storage devices available to retain the

15

data object segments of the data object,

16

$M_i$  is the maximum digital data transfer

17

load,

18

$C_i$  is the current digital data transfer

19

load,

20

$H$  is the file usage factor, and

21

$I$  is the file interactivity factor.

- 1 18. (Original) The method of claim 15 wherein the second function is further  
2 dependent upon the file usage factor and the file interactivity factor.

- 1 19. (Currently Amended) The method of claim 18 wherein the second function  
2 to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

**Segn** is the a segment size for one data object  
segment of the remaining data object segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed  
during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

where

**N<sub>d</sub>** is the number of storage devices  
available to retain the data object  
~~segments of the data object,~~

**M<sub>i</sub>** is the maximum digital data transfer  
load,

**C<sub>i</sub>** is the current digital data transfer  
load,

**H** is the file usage factor, and

22

I is the file interactivity factor.

1 20. (Original) The method of claim 1 wherein the data object is a video data  
2 file to be transferred isochronously to the second computing system.

1 21. (Previously Presented) A digital data service system in communication  
2 with a plurality of computing systems to transfer at least one data object of  
3 a plurality of data objects to at least one of the plurality of computing  
4 systems, comprising:

5 a plurality of data object storage devices in communication with each  
6 other and with any of the plurality of computing systems for  
7 retaining each of said plurality of data objects; and

8 a segmentation apparatus in communication with the plurality of data  
9 object storage devices to fragment any of the data objects into a  
10 plurality of segments to allow transfer to and processing by at least  
11 one of the computing systems of said segments, wherein the  
12 segmentation apparatus performs said fragmenting by the steps of:

13 requesting a range of addresses within one of said data object  
14 storage devices containing said data object,

15 determining a number of said data object storage devices available  
16 to retain a plurality of segments of said data object,

17 determining a maximum digital data transfer load for the data object  
18 storage devices,  
  
19 assigning a minimum segment size which is the smallest amount of  
20 digital data to be contained within one segment of the data  
21 object,  
  
22 calculating a first segment size as a first function of a number of the  
23 data object storage devices, the current digital data transfer  
24 load, the maximum digital data transfer load, and the minimum  
25 segment size,  
  
26 assigning a last segment size as the minimum segment size,  
  
27 calculating all remaining segment sizes as a second function of the  
28 number of the data object storage devices, the current digital  
29 data transfer load, the maximum digital data transfer load, and  
30 the minimum segment size, and  
  
31 partitioning said data object into segments whereby the first  
32 segment of the data object is of the first segment size, the last  
33 segment of the data object is of the last segment size, and all  
34 the remaining segments of the data object is of the remaining  
35 segment sizes;

1 22. (Cancelled)



1    23.    (Previously Presented) The system of claim 21 wherein the segmentation  
2           apparatus the further performs the steps of:

3           assigning one of the number of data object storage devices to retain  
4           each segment of the data object;

5           assigning an address within the data object storage devices to identify  
6           the location of an assigned segment;

7           assigning an object name to each segment of the data object; and

8           transferring each segment to its assigned data object storage device.

1    24.    (Previously Presented) The system of claim 21 wherein the first function to  
2           determine the first segment size is:

3           
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4           where

5           **Seg1** is the first segment size,

6           **min** is the minimum function of two variables,

7           **SegSize<sub>min</sub>** is the minimum segment size allowed  
8           during the fragmenting of said data object,

9           **V** is a total size of the data object, and

10 **f** is determined by the formula:

11 
$$f = N_d + \left( \frac{M_i}{M_i} - C_i \right)$$

12 where

13 **N<sub>d</sub>** is the number of storage devices  
14 available to retain the segments of the  
15 data object,

16 **M<sub>i</sub>** is the maximum digital data transfer  
17 load, and

18 **C<sub>i</sub>** is the current digital data transfer  
19 load.

1 25. (Previously Presented) The system of claim 21 wherein the second  
2 function to determine the remaining segment sizes is:

3 
$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Segn** is the a segment size for one segment of the  
6 remaining segments,

7 **max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_i}{\mathbf{M}_i - \mathbf{C}_i} \right)$$

where

$N_d$  is the number of storage devices available to retain the segments of the data object,

$M_l$  is the maximum digital data transfer load, and

$C_i$  is the current digital data transfer load.

26. (Previously Presented) The system of claim 21 wherein the segmentation apparatus the further performs the step of:

determining a file interactivity factor describing a number of jumps by the computing system within the data object during processing by said second computing system.

1 27. (Original) The system of claim 26 wherein the first function is further  
2 dependent upon the file interactivity factor.

1 28. (Previously Presented) The system of claim 27 wherein the first function to  
2 determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,

9 **V** is a total size of the data object, and

10

11 **f** is determined by the formula:

12 
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

13 where

14  $N_d$  is the number of storage devices  
15 available to retain the segments of the  
16 data object,  
17  $M_l$  is the maximum digital data transfer  
18 load,  
19  $C_l$  is the current digital data transfer  
20 load, and  
21  $I$  is the file interactivity factor.

1 29. (Previously Presented) The system of claim 21 wherein the second  
2 function is further dependent upon the file interactivity factor.

1 30. (Previously Presented) The system of claim 29 wherein the second  
2 function to determine the remaining segment sizes is:

3 
$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4 where

5  $\text{Segn}$  is the a segment size for one segment of the  
6 remaining segments,

7  $\max$  is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed

during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

where

**N<sub>d</sub>** is the number of storage devices  
available to retain the segments of the  
data object,

**M<sub>i</sub>** is the maximum digital data transfer  
load,

**C<sub>i</sub>** is the current digital data transfer  
load, and

**I** is the file interactivity factor.

31. (Previously Presented) The system of claim 21 wherein the segmentation  
apparatus the further performs the step of:

3           determining a file usage factor describing a number of requests for  
4           said data object for a period of time.

1    32.   (Original) The system of claim 31 wherein the first function is further  
2           dependent upon the file usage factor.

1    33.   (Previously Presented) The system of claim 32 wherein the first function to  
2           determine the first segment size is:

3                            **$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$**

4                           where

5                           **Seg1** is the first segment size,

6                           **min** is the minimum function of two variables,

7                           **SegSize<sub>min</sub>** is the minimum segment size allowed  
8                           during the fragmenting of said data object,

9                           **V** is a total size of the data object, and

10                          **f** is determined by the formula:

11    **$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H$**

12                          where

13  $N_d$  is the number of storage devices  
14 available to retain the segments of the  
15 data object,  
16  $M_l$  is the maximum digital data transfer  
17 load,  
18  $C_l$  is the current digital data transfer  
19 load, and  
20  $H$  is the file usage factor.

1 34. (Original) The system of claim 31 wherein the second function is further  
2 dependent upon the file usage factor.

1 35. (Previously Presented) The system of claim 34 wherein the second  
2 function to determine the remaining segment sizes is:

3 
$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4 where

5  $\text{Segn}$  is the a segment size for one segment of the  
6 remaining segments,

7  $\max$  is the maximum function of two variables,



**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_i}{\mathbf{M}_i - \mathbf{C}_i} \right) + \mathbf{H}$$

where

$N_d$  is the number of storage devices available to retain the segments of the data object,

$M_i$  is the maximum digital data transfer load,

$C_i$  is the current digital data transfer load, and

**H** is the file usage factor.

36. (Previously Presented) The system of claim 21 wherein the segmentation apparatus the further performs the steps of:

3           determining a file usage factor describing a number of requests for  
4           said data object for a period of time; and  
  
5           determining a file interactivity factor describing a number of jumps by  
6           the computing system within the data object during processing by  
7           said second computing system.

1   37.   (Original) The system of claim 36 wherein the first function is further  
2           dependent upon the file usage factor and the file interactivity factor.

1   38.   (Previously Presented) The system of claim 37 wherein the first function to  
2           determine the first segment size is:

3                           
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4                           where

5                           **Seg1** is the first segment size,

6                           **min** is the minimum function of two variables,

7                           **SegSize<sub>min</sub>** is the minimum segment size allowed  
8                           during the fragmenting of said data object,

9                           **V** is a total size of the data object, and

10                          **f** is determined by the formula:

11

$$f = N_d + \left( \frac{M_i}{M_i} - C_i \right) + H + I$$

12

where

13

$N_d$  is the number of storage devices

14

available to retain the segments of the

15

data object,

16

$M_i$  is the maximum digital data transfer

17

load,

18

$C_i$  is the current digital data transfer

19

load,

20

$H$  is the file usage factor, and

21

$I$  is the file interactivity factor.

1 39. (Original) The system of claim 37 wherein the second function is further  
2 dependent upon the file usage factor and the file interactivity factor.

1 40. (Previously Presented) The system of claim 39 wherein the second  
2 function to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

**Segn** is the a segment size for one segment of the remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

where

$N_d$  is the number of storage devices available to retain the segments of the data object,

$M_l$  is the maximum digital data transfer load,

$C_1$  is the current digital data transfer load,

**H** is the file usage factor, and

22

I is the file interactivity factor.

1 41. (Original) The system of claim 21 wherein the data object is a video data  
2 file to be transferred isochronously to the computing system.

1 42. (Currently Amended) An apparatus for facilitating transfer of a data object  
2 retained by a ~~first~~ at least one computer-readable data storage device in  
3 communication with a first computing system from said first computing  
4 system to a second computing system and thence to a second computer-  
5 readable data storage device, comprising means for segmenting said data  
6 object into a plurality of data object segments retained by said computer-  
7 readable data storage devices, said means for segmenting said data  
8 object comprising:

9 means for requesting a range of addresses within said first computer-  
10 readable data storage device in communication with the first  
11 computing system containing said data object;

12 means for determining a number of computer-readable storage  
13 devices in communication with said first computing system  
14 available to retain a plurality of segments of said data object;

15 means for determining a maximum digital data transfer load for the  
16 computer-readable storage devices in communication with said first  
17 computing system;

18 means for assigning a minimum segment size which is the smallest  
19 amount of digital data to be contained within one data object  
20 ~~segment of the data object~~;

21 means for calculating a first segment size as a first function of a  
22 number of the computer-readable storage devices, the current  
23 digital data transfer load, the maximum digital data transfer load,  
24 and the minimum segment size;

25 means for assigning a last segment size as the minimum segment  
26 size;

27 means for calculating all remaining segment sizes as a second  
28 function of the number of the computer-readable storage devices,  
29 the current digital data transfer load, the maximum digital data  
30 transfer load, and the minimum segment size; and

31 means for partitioning said data object into a plurality of data object  
32 segments retained by said computer-readable data storage devices  
33 ~~whereby the first~~ a first data object ~~segment of the data object~~ is of  
34 the first segment size, the last data object ~~segment of the data~~  
35 ~~object~~ is of the last segment size, and all the remaining data object  
36 ~~segments of the data object~~ is of the remaining segment sizes.

1 43. (Currently Amended) The apparatus of claim 42 wherein said means for  
2 segmenting said data object further comprises:

3 means for assigning one of the number of computer-readable storage  
4 devices to retain each data object segment ~~of the data object~~;

5 means for assigning an address within the computer-readable storage  
6 devices to identify the location of an assigned segment;

7 means for assigning an object name to each data object segment ~~of~~  
8 ~~the data object~~; and

9 means for transferring each segment to its assigned computer-  
10 readable storage device.

1 44. (Currently Amended) The apparatus of claim 42 wherein the first function  
2 to determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7                    **SegSize<sub>min</sub>** is the minimum segment size allowed  
8                    during the fragmenting of said data object,  
9                    **V** is a total size of the data object, and  
10                  **f** is determined by the formula:

11                    
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right)$$

12                    where

13                    **N<sub>d</sub>** is the number of computer-readable  
14                    storage devices available to retain the  
15                    data object segments of the data object,

16                    **M<sub>i</sub>** is the maximum digital data transfer  
17                    load, and

18                    **C<sub>i</sub>** is the current digital data transfer  
19                    load.

1    45.    (Currently Amended) The apparatus of claim 42 wherein the second  
2           function to determine the remaining segment sizes is:

3                    
$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4                    where



**Segn** is the a segment size for one data object  
segment of the remaining data object segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed  
during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right)$$

where

**N<sub>d</sub>** is the number of computer-readable  
storage devices available to retain the  
data object segments of the data object,

**M<sub>i</sub>** is the maximum digital data transfer  
load, and

**C<sub>i</sub>** is the current digital data transfer  
load.

1 46. (Previously Presented) The apparatus of claim 42 wherein said means for  
2 segmenting said data object further comprises:

3 means for determining a file interactivity factor describing a number of  
4 jumps by the second computing system within the data object  
5 during processing by said second computing system.

1 47. (Original) The apparatus of claim 46 wherein the first function is further  
2 dependent upon the file interactivity factor.

1 48. (Currently Amended) The apparatus of claim 47 wherein the first function  
2 to determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,

9 **V** is a total size of the data object, and

10 **f** is determined by the formula:

11

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

12

where

13

$N_d$  is the number of computer-readable

14

storage devices available to retain the

15

data object segments of the data object,

16

$M_i$  is the maximum digital data transfer

17

load,

18

$C_i$  is the current digital data transfer

19

load, and

20

$I$  is the file interactivity factor.

1 49. (Original) The apparatus of claim 46 wherein the second function is further  
2 dependent upon the file interactivity factor.

1 50. (Currently Amended) The apparatus of claim 49 wherein the second  
2 function to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

**Segn** is the a segment size for one data object  
segment of the remaining data object segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed  
during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

where

**N<sub>d</sub>** is the number of computer-readable  
storage devices available to retain the  
data object segments of the data object,

**M<sub>i</sub>** is the maximum digital data transfer  
load,

**C<sub>i</sub>** is the current digital data transfer  
load, and

**I** is the file interactivity factor.

1 51. (Previously Presented) The apparatus of claim 42 wherein said means for  
2 segmenting said data object further comprises:

3 means for determining a file usage factor describing a number of  
4 requests for said data object for a period of time.

1 52. (Original) The apparatus of claim 51 wherein the first function is further  
2 dependent upon the file usage factor.

1 53. (Currently Amended) The apparatus of claim 52 wherein the first function  
2 to determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,

9 **V** is a total size of the data object, and

10 **f** is determined by the formula:

11

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H$$

12

where

13

$N_d$  is the number of computer-readable

14

storage devices available to retain the

15

data object segments of the data object,

16

$M_i$  is the maximum digital data transfer

17

load,

18

$C_i$  is the current digital data transfer

19

load, and

20

$H$  is the file usage factor.

1 54. (Original) The apparatus of claim 51 wherein the second function is further  
2 dependent upon the file usage factor.

1 55. (Currently Amended) The apparatus of claim 54 wherein the second  
2 function to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

**Segn** is the a segment size for one data object

segment of the remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed

during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H$$

where

**N<sub>d</sub>** is the number of computer-readable  
storage devices available to retain the  
data object segments of the data object,

**M<sub>i</sub>** is the maximum digital data transfer  
load,

**C<sub>i</sub>** is the current digital data transfer  
load, and

**H** is the file usage factor.

1 56. (Previously Presented) The apparatus of claim 42 wherein said means for  
2 segmenting said data object further comprises:

3 means for determining a file usage factor describing a number of  
4 requests for said data object for a period of time; and

5 means for determining a file interactivity factor describing a number of  
6 jumps by the second computing system within the data object  
7 during processing by said second computing system.

1 57. (Original) The apparatus of claim 56 wherein the first function is further  
2 dependent upon the file usage factor and the file interactivity factor.

1 58. (Currently Amended) The apparatus of claim 57 wherein the first function  
2 to determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,



9                    **V** is a total size of the data object, and

10                   **f** is determined by the formula:

11                   
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

12                   where

13                   **N<sub>d</sub>** is the number of computer-readable  
14                   storage devices available to retain the  
15                   data object segments of the data object,

16                   **M<sub>i</sub>** is the maximum digital data transfer  
17                   load,

18                   **C<sub>i</sub>** is the current digital data transfer  
19                   load,

20                   **H** is the file usage factor, and

21                   **I** is the file interactivity factor.

1    59.    (Original) The apparatus of claim 56 wherein the second function is further  
2           dependent upon the file usage factor and the file interactivity factor.

1    60.    (Currently Amended) The apparatus of claim 57 wherein the second  
2           function to determine the remaining segment sizes is:

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

where

**Segn** is the a segment size for one data object segment of the remaining data object segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

where

**N<sub>d</sub>** is the number of computer-readable storage devices available to retain the data object segments of the data object,

**M<sub>i</sub>** is the maximum digital data transfer load,

19  $C_1$  is the current digital data transfer  
20 load,

21  $H$  is the file usage factor, and

22  $I$  is the file interactivity factor.

1 61. (Original) The apparatus of claim 42 wherein the data object is a video  
2 data file to be transferred isochronously to the second computing system.

1 62. (Previously Presented) A computer-readable medium for retaining a  
2 computer program code which, when executed on a computing system  
3 performs a computer program process for facilitating transfer of a data  
4 object retained by a first A method facilitating transfer of a data object  
5 retained by a first computer-readable data storage device in  
6 communication with a first computing system from said first computing  
7 system to a second computing system and thence to a second computer-  
8 readable data storage device, whereby said computer program process  
9 executes the step of segmenting said data object, said segmenting said  
10 data object comprising the steps of:

11 requesting a range of addresses within a computer-readable storage  
12 device in communication with said first computing system  
13 containing said data object;

14           determining a number of computer-readable storage devices in  
15           communication with said first computing system available to retain  
16           a plurality of segments of said data object;

17           determining a maximum digital data transfer load for the computer-  
18           readable storage devices in communication with said first  
19           computing system;

20           assigning a minimum segment size which is the smallest amount of  
21           digital data to be contained within one segment of the data object;

22           calculating a first segment size as a first function of a number of the  
23           computer-readable storage devices, the current digital data transfer  
24           load, the maximum digital data transfer load, and the minimum  
25           segment size;

26           assigning a last segment size as the minimum segment size;

27           calculating all remaining segment sizes as a second function of the  
28           number of the computer-readable storage devices, the current  
29           digital data transfer load, the maximum digital data transfer load,  
30           and the minimum segment size; and

31           partitioning said data object into segments whereby the first segment  
32           of the data object is of the first segment size, the last segment of

33                   the data object is of the last segment size, and all the remaining  
34                   segments of the data object is of the remaining segment sizes.

1     63.     (Previously Presented) The medium of claim 62 wherein performing step  
2             of segmenting said data object further comprises the steps of:

3                   assigning one of the number of computer-readable storage devices to  
4                   retain each segment of the data object;

5                   assigning an address within the computer-readable storage devices to  
6                   identify the location of an assigned segment;

7                   assigning an object name to each segment of the data object; and

8                   transferring each segment to its assigned computer-readable storage  
9                   device.

1     64.     (Previously Presented) The medium of claim 62 wherein the first function  
2             to determine the first segment size is:

3                   
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4                   where

5                   **Seg1** is the first segment size,

6                   **min** is the minimum function of two variables,

7                    **SegSize<sub>min</sub>** is the minimum segment size allowed  
8                    during the fragmenting of said data object,  
9                    **V** is a total size of the data object, and  
10                  **f** is determined by the formula:

11                    
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right)$$

12                    where

13                    **N<sub>d</sub>** is the number of computer-readable  
14                    storage devices available to retain the  
15                    segments of the data object,

16                    **M<sub>i</sub>** is the maximum digital data transfer  
17                    load, and

18                    **C<sub>i</sub>** is the current digital data transfer  
19                    load.

1    65.    (Previously Presented) The medium of claim 62 wherein the second  
2           function to determine the remaining segment sizes is:

3                    
$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4                    where

**Segn** is the a segment size for one segment of the remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_i}{\mathbf{M}_i - \mathbf{C}_i} \right)$$

where

$N_d$  is the number of computer-readable storage devices available to retain the segments of the data object,

$M_i$  is the maximum digital data transfer load, and

$C_1$  is the current digital data transfer load.

1 66. (Previously Presented) The medium of claim 62 wherein performing step  
2 of segmenting said data object further comprises the step of:

3 determining a file interactivity factor describing a number of jumps by  
4 the second computing system within the data object during  
5 processing by said second computing system.

1 67. (Original) The medium of claim 66 wherein the first function is further  
2 dependent upon the file interactivity factor.

1 68. (Previously Presented) The medium of claim 67 wherein the first function  
2 to determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,

9 **V** is a total size of the data object, and

10 **f** is determined by the formula:



11

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

12

where

13

$N_d$  is the number of computer-readable  
storage devices available to retain the  
segments of the data object,

14

15

16

$M_i$  is the maximum digital data transfer  
load,

17

18

$C_i$  is the current digital data transfer  
load, and

19

20

$I$  is the file interactivity factor.

1 69. (Original) The medium of claim 66 wherein the second function is further  
2 dependent upon the file interactivity factor.

1 70. (Previously Presented) The medium of claim 69 wherein the second  
2 function to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

**Segn** is the a segment size for one segment of the  
remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed  
during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

where

**N<sub>d</sub>** is the number of computer-readable  
storage devices available to retain the  
segments of the data object,

**M<sub>i</sub>** is the maximum digital data transfer  
load,

**C<sub>i</sub>** is the current digital data transfer  
load, and

**I** is the file interactivity factor.

1 71. (Previously Presented) The medium of claim 62 wherein performing step  
2 of segmenting said data object further comprises the step of:

3 determining a file usage factor describing a number of requests for  
4 said data object for a period of time.

1 72. (Previously Presented) The medium of claim 71 wherein the first function  
2 is further dependent upon the file usage factor.

1 73. (Previously Presented) The medium of claim 72 wherein the first function  
2 to determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,

9 **V** is a total size of the data object, and

10 **f** is determined by the formula:

11

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H$$

12

where

13

$N_d$  is the number of computer-readable

14

storage devices available to retain the

15

segments of the data object,

16

$M_i$  is the maximum digital data transfer

17

load,

18

$C_i$  is the current digital data transfer

19

load, and

20

$H$  is the file usage factor.

1 74. (Original) The medium of claim 71 wherein the second function is further  
2 dependent upon the file usage factor.

1 75. (Previously Presented) The medium of claim 74 wherein the second  
2 function to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

**Segn** is the a segment size for one segment of the remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_l}{\mathbf{M}_l - \mathbf{C}_l} \right) + \mathbf{H}$$

where

$N_d$  is the number of computer-readable storage devices available to retain the segments of the data object,

$M_l$  is the maximum digital data transfer load,

$C_l$  is the current digital data transfer load, and

**H** is the file usage factor.

1 76. (Previously Presented) The medium of claim 62 wherein performing step  
2 of segmenting said data object further comprises the steps of:

3 determining a file usage factor describing a number of requests for  
4 said data object for a period of time; and

5 determining a file interactivity factor describing a number of jumps by  
6 the second computing system within the data object during  
7 processing by said second computing system.

1 77. (Original) The medium of claim 76 wherein the first function is further  
2 dependent upon the file usage factor and the file interactivity factor.

1 78. (Previously Presented) The medium of claim 77 wherein the first function  
2 to determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of said data object,

9 **V** is a total size of the data object, and

10 **f** is determined by the formula:

11 
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

12 where

13 **N<sub>d</sub>** is the number of computer-readable  
14 storage devices available to retain the  
15 segments of the data object,

16 **M<sub>i</sub>** is the maximum digital data transfer  
17 load,

18 **C<sub>i</sub>** is the current digital data transfer  
19 load,

20 **H** is the file usage factor, and

21 **I** is the file interactivity factor.

1 79. (Original) The medium of claim 76 wherein the second function is further  
2 dependent upon the file usage factor and the file interactivity factor.

1 80. (Previously Presented) The medium of claim 79 wherein the second  
2 function to determine the remaining segment sizes is:

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

where

**Segn** is the a segment size for one segment of the remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of said data object,

**V** is a total size of the data object, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

where

**N<sub>d</sub>** is the number of computer-readable storage devices available to retain the segments of the data object,

**M<sub>i</sub>** is the maximum digital data transfer load,



19  $C_i$  is the current digital data transfer  
20 load,

21  $H$  is the file usage factor, and

22  $I$  is the file interactivity factor.

1 81. (Original) The medium of claim 62 wherein the data object is a video data  
2 file to be transferred isochronously to the second computing system.

1 82. (Previously Presented) A video data file distribution system in  
2 communication with a plurality of computing systems for transfer of at  
3 least one video data file of a plurality of video data files to at least one of  
4 the plurality of computing systems, comprising:

5 a plurality of video data file retention devices in communication with  
6 each other and with any of the plurality of computing systems; and

7 a segmentation apparatus in communication with the plurality of video  
8 data file retention devices to segment any of the video data files  
9 into a plurality of segments to allow transfer to and processing by at  
10 least one of the computing systems of said segments, wherein the  
11 segmentation apparatus performs said segmenting by the steps of:

12 requesting a range of addresses within a storage device of the first  
13 computing system containing said video data file,

14                   determining a number of computer-readable storage devices in  
15                   communication with said first computing system available to  
16                   retain a plurality of segments of said video data file,  
  
17                   determining a maximum digital data transfer load for the computer-  
18                   readable storage devices in communication with said first  
19                   computing system,  
  
20                   assigning a minimum segment size which is the smallest amount of  
21                   digital data to be contained within one segment of the video  
22                   data file,  
  
23                   calculating a first segment size as a first function of a number of the  
24                   computer-readable storage devices, the current digital data  
25                   transfer load, the maximum digital data transfer load, and the  
26                   minimum segment size,  
  
27                   assigning a last segment size as the minimum segment size,  
  
28                   calculating all remaining segment sizes as a second function of the  
29                   number of the computer-readable storage devices, the current  
30                   digital data transfer load, the maximum digital data transfer load,  
31                   and the minimum segment size, and  
  
32                   partitioning said video data file into segments whereby the first  
33                   segment of the video data file is of the first segment size, the

34 last segment of the video data file is of the last segment size,  
35 and all the remaining segments of the video data file is of the  
36 remaining segment sizes.

1 83. (Cancelled)

1 84. (Previously Presented) The system of claim 82 wherein the segmentation  
2 apparatus the further performs the segmenting of the video data file by the  
3 steps of:

4 assigning one of the number of computer-readable storage devices to  
5 retain each segment of the video data file; and

6 assigning an address within the computer-readable storage devices to  
7 identify the location of an assigned segment.

1 85. (Previously Presented) The system of claim 82 wherein the first function to  
2 determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7                    **SegSize<sub>min</sub>** is the minimum segment size allowed  
8                    during the fragmenting of the video data file,

9                    **V** is a total size of the video data file, and

10                  **f** is determined by the formula:

11                    
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right)$$

12                    where

13                    **N<sub>d</sub>** is the number of computer-readable  
14                    storage devices available to retain the  
15                    segments of the video data file,

16                    **M<sub>i</sub>** is the maximum digital data transfer  
17                    load, and

18                    **C<sub>i</sub>** is the current digital data transfer  
19                    load.

1    86.    (Previously Presented) The system of claim 82 wherein the second  
2           function to determine the remaining segment sizes is:

3                    
$$\mathbf{Segn} = \max(\mathbf{SegSize}_{\min}, V/f)$$

4                    where

**Segn** is the a segment size for one segment of the remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of the video data file,

**V** is a total size of the video data file, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right)$$

where

**N<sub>d</sub>** is the number of computer-readable storage devices available to retain the segments of the video data file,

**M<sub>i</sub>** is the maximum digital data transfer load, and

**C<sub>i</sub>** is the current digital data transfer load.

1 87. (Previously Presented) The system of claim 82 wherein performing step of  
2 segmenting said data object further comprises the step of:

3 determining a file interactivity factor describing a number of jumps by  
4 the computing system within the video data file during processing  
5 by at least one of said plurality of computing systems receiving said  
6 data object.

1 88. (Original) The system of claim 87 wherein the first function is further  
2 dependent upon the file interactivity factor.

1 89. (Previously Presented) The system of claim 88 wherein the first function to  
2 determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of the video data file,

9 **V** is a total size of the video data file, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + I$$

where

**N<sub>d</sub>** is the number of computer-readable storage devices available to retain the segments of the video data file,

**M<sub>i</sub>** is the maximum digital data transfer load,

**C<sub>i</sub>** is the current digital data transfer load, and

**I** is the file interactivity factor.

90. (Original) The system of claim 87 wherein the second function is further dependent upon the file interactivity factor.

91. (Previously Presented) The system of claim 90 wherein the second function to determine the remaining segment sizes is:

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

where

**Segn** is the a segment size for one segment of the remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed during the fragmenting of the video data file,

**V** is a total size of the video data file, and

**f** is determined by the formula:

$$\mathbf{f} = \mathbf{N}_d + \left( \frac{\mathbf{M}_i}{\mathbf{M}_i - \mathbf{C}_i} \right) + \mathbf{I}$$

where

$N_d$  is the number of computer-readable storage devices available to retain the segments of the video data file,

$M_l$  is the maximum digital data transfer load,

$C_i$  is the current digital data transfer load, and

**I** is the file interactivity factor.



1 92. (Previously Presented) The system of claim 82 wherein performing step of  
2 segmenting said data object further comprises the step of:

3 determining a file usage factor describing a number of requests for  
4 said video data file for a period of time.

1 93. (Original) The system of claim 92 wherein the first function is further  
2 dependent upon the file usage factor.

1 94. (Previously Presented) The system of claim 93 wherein the first function to  
2 determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of the video data file,

9 **V** is a total size of the video data file, and

10 **f** is determined by the formula:

11

$$f = N_d + \left( \frac{M_i}{M_i} - C_i \right) + H$$

12

where

13

$N_d$  is the number of computer-readable

14

storage devices available to retain the

15

segments of the video data file,

16

$M_i$  is the maximum digital data transfer

17

load,

18

$C_i$  is the current digital data transfer

19

load, and

20

$H$  is the file usage factor.

1 95. (Original) The system of claim 92 wherein the second function is further  
2 dependent upon the file usage factor.

1 96. (Previously Presented) The system of claim 95 wherein the second  
2 function to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

**Segn** is the a segment size for one segment of the  
remaining segments,

**max** is the maximum function of two variables,

**SegSize<sub>min</sub>** is the minimum segment size allowed  
during the fragmenting of the video data file,

**V** is a total size of the video data file, and

**f** is determined by the formula:

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H$$

where

**N<sub>d</sub>** is the number of computer-readable  
storage devices available to retain the  
segments of the video data file,

**M<sub>i</sub>** is the maximum digital data transfer  
load,

**C<sub>i</sub>** is the current digital data transfer  
load, and

**H** is the file usage factor.

1 97. (Previously Presented) The system of claim 82 wherein performing step of  
2 segmenting said data object further comprises the steps of:

3 determining a file usage factor describing a number of requests for  
4 said video data file for a period of time; and

5 determining a file interactivity factor describing a number of jumps by  
6 at least one of the plurality of computing systems within the video  
7 data file during processing by at least one of said plurality of  
8 computing systems.

1 98. (Original) The system of claim 97 wherein the first function is further  
2 dependent upon the file usage factor and the file interactivity factor.

1 99. (Previously Presented) The system of claim 98 wherein the first function to  
2 determine the first segment size is:

3 
$$\text{Seg1} = \min(\text{SegSize}_{\min}, V/f)$$

4 where

5 **Seg1** is the first segment size,

6 **min** is the minimum function of two variables,

7 **SegSize<sub>min</sub>** is the minimum segment size allowed  
8 during the fragmenting of the video data file,

9 **V** is a total size of the video data file, and

10 **f** is determined by the formula:

11 
$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

12 where

13 **N<sub>d</sub>** is the number of computer-readable  
14 storage devices available to retain the  
15 segments of the video data file,

16 **M<sub>i</sub>** is the maximum digital data transfer  
17 load,

18 **C<sub>i</sub>** is the current digital data transfer  
19 load,

20 **H** is the file usage factor, and

21 **I** is the file interactivity factor.

1 100. (Original) The system of claim 97 wherein the second function is further  
2 dependent upon the file usage factor and the file interactivity factor.

1 101. (Previously Presented) The system of claim 100 wherein the second  
2 function to determine the remaining segment sizes is:

3

$$\text{Segn} = \max(\text{SegSize}_{\min}, V/f)$$

4

where

5

**Segn** is the a segment size for one segment of the  
remaining segments,

6

7

**max** is the maximum function of two variables,

8

**SegSize<sub>min</sub>** is the minimum segment size allowed  
during the fragmenting of the video data file,

9

10

**V** is a total size of the video data file, and

11

**f** is determined by the formula:

12

$$f = N_d + \left( \frac{M_i}{M_i - C_i} \right) + H + I$$

13

where

14

**N<sub>d</sub>** is the number of computer-readable  
storage devices available to retain the  
segments of the video data file,

15

16

17

**M<sub>i</sub>** is the maximum digital data transfer  
load,

18

19  $C_i$  is the current digital data transfer

20 load,

21  $H$  is the file usage factor, and

22  $I$  is the file interactivity factor.

1 102. (Original) The system of claim 82 wherein the video data file is transferred  
2 isochronously to the computing system.